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MAKING THE GRADE AND BUILDING ON THE FUTURE

While Lawrence Livermore National Laboratory (LLNL) continued pushing the boundaries of science, technology and engineering in 2018, it also turned out to be a great place to work.

In November, Glassdoor placed LLNL among the top 100 Best Places to Work in the nation (Glassdoor is the website where employees provide reviews of their company for prospective job seekers). The Lab sits at No. 24 on the overall list, but also is the No. 1 government/government contractor employer, No. 1 laboratory employer, No. 4 large employer headquartered in San Francisco and No. 6 U.S. large employer in the Bay Area.

In the fall, the Laboratory's next generation of supercomputer – Sierra – was installed, commissioned and dedicated. Sierra is now the second fastest computer in the world, behind its partner, Summit, at Oak Ridge National Laboratory. Sierra will be used for stockpile stewardship.

This year, the Lab hosted for the first time visits from Energy Secretary Rick Perry in March, National Nuclear Security Administrator Lisa Gordon-Haggerty in April and Deputy Energy Secretary Dan Brouillette in December.

Over the last year, Lawrence Livermore's W80 life extension program (LEP) achieved a number of significant milestones, including W80-4 hydrodynamic experiments that provide important data underwriting a modification that would significantly increase system margin, providing an important option for managing strategic material supplies and executing high-energy density experiments at the National Ignition Facility (NIF) in support of the W80-4 LEP. The data acquired in those experiments is helping weapon designers assess replacement options for aged materials in the W80 warhead. The experiments also mark the successful

INSIDE YEAR IN REVIEW

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LOOKING BACK AT 2018

Firing Tank Operator Drew Carlson (foreground) safeguards the mouth of the 10kg spherical firing tank at LLNL's High Explosives Applications Facility as Electronic Technician Raya Yy (background, left) and Ramrod Shawn Strickland wire a high-explosive charge for an experiment.

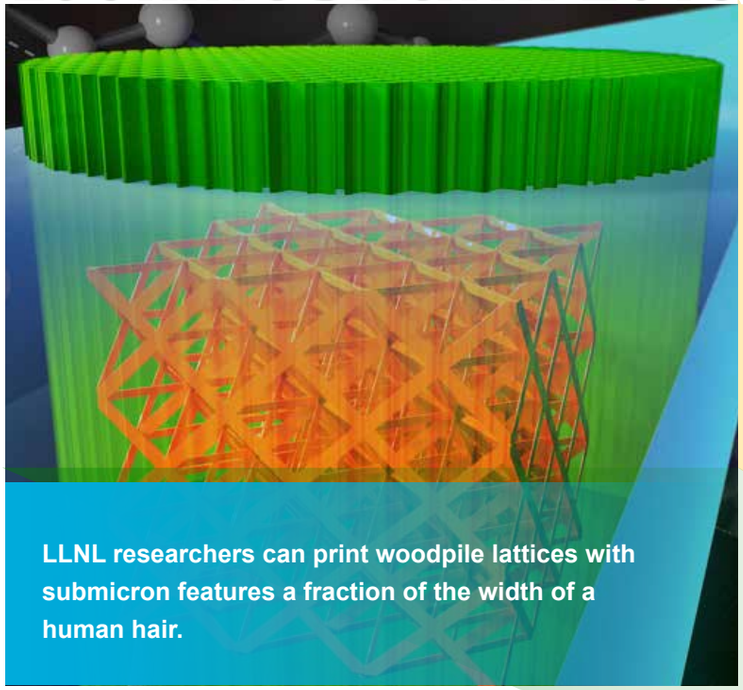
completion of one of the 12 key objectives on the NNSA's "getting the job done" list of top priorities for FY18.

In the advancing additive manufacturing (3D printing) arena, LLNL constructed the new Additive Manufacturing Laboratory in the Livermore Valley Open Campus. The facility features a large wet lab with a dozen fume hoods, where 3D printing, materials research, chemical work, carbon capture technology and other research activities can be performed. A 5,000-square-foot dry lab will house industrial-size manufacturing machines, including laser powder-bed fusion and diode-based metal additive manufacturing systems, with space for metrology and characterization as well.

In this edition, *Newsline* looks back at 2018 with a month-by-month sampling of events and accomplishments in three categories: science and technology, people and operations. The many awards earned by LLNL employees also are highlighted.

ADDITIONAL LAB ACCOMPLISHMENTS IN 2018

- A new unclassified computer, Lassen, was brought on line, which uses the same advanced computing architecture as Sierra. Lassen will be used to help solve major national challenges in areas including nuclear nonproliferation, rapid development of cancer therapeutics and addressing health care challenges facing veterans.
- NIF continued to make significant progress, announcing an experimental campaign that resulted in 54 kilojoules of fusion energy output — double the previous record. In addition, this summer NIF set a new laser energy record, firing 2.15 megajoules, a 15 percent improvement over the laser's design specification.
- Lab scientists created a new form of water — called superionic ice — that acts like a strange cross between a solid and a liquid. This kind of water doesn't exist naturally on Earth but may be present in the mantles of icy planets like Neptune and Uranus.
- The world's highest average-power petawatt laser was fully installed and commissioned at the ELI Beamlines facility in the Czech Republic. LLNL researchers designed, developed and constructed the laser in just three years.
- NNSA approved alternative selection and cost range (CD-1) for the Lawrence Livermore National Laboratory Exascale Computing Facility Modernization (ECFM) project. The purpose of the project is to build the infrastructure needed to support the future Advanced Technology Systems (ATS), a new generation of high-performance computing that is critical to enabling the Laboratory's stockpile stewardship mission.
- Researchers at Lawrence Livermore National Laboratory have created 3D-printed supercapacitor electrodes capable of achieving record-breaking performance and overcoming conventional tradeoffs for supercapacitors in the process.
- Harnessing the unusual characteristics of the elusive subatomic particles known as antineutrinos, Lawrence Livermore will lead a new international multi-laboratory and university collaboration for nonproliferation research. The program will support the development of detection hardware and algorithms to enable improved nonproliferation detector capabilities for remote monitoring of nuclear reactors.
- The Department of Energy named Lawrence Livermore as one of nine facilities participating to restore high-intensity laser research in the U.S.



LLNL researchers can print woodpile lattices with submicron features a fraction of the width of a human hair.

THE 2018 EVENTS AT LAWRENCE LIVERMORE

A MONTH-BY-MONTH RECAP

JANUARY

SCIENCE AND TECHNOLOGY

LLNL scientists study a new “tunable” biosurfactant that is environmentally friendly and can have broad industrial use.
Read more

Lawrence Livermore researchers discover novel ways to extend the capabilities of two-photon lithography, a high-resolution 3D printing technique capable of producing nanoscale features smaller than one-hundredth the width of a human hair.
Read more

New research by an LLNL cosmochemist shows that, by looking at trapped gases in ancient Martian meteorites, the timing and effectiveness of atmospheric escape processes that have shaped Mars’ climate can be pinned down.
Read more

The Department of Energy’s Advanced Manufacturing Office funds $1.87 million for seven new industry projects under an ongoing initiative designed to utilize DOE’s high-performance computing resources and expertise to advance U.S. manufacturing and clean-energy technologies.
Read more

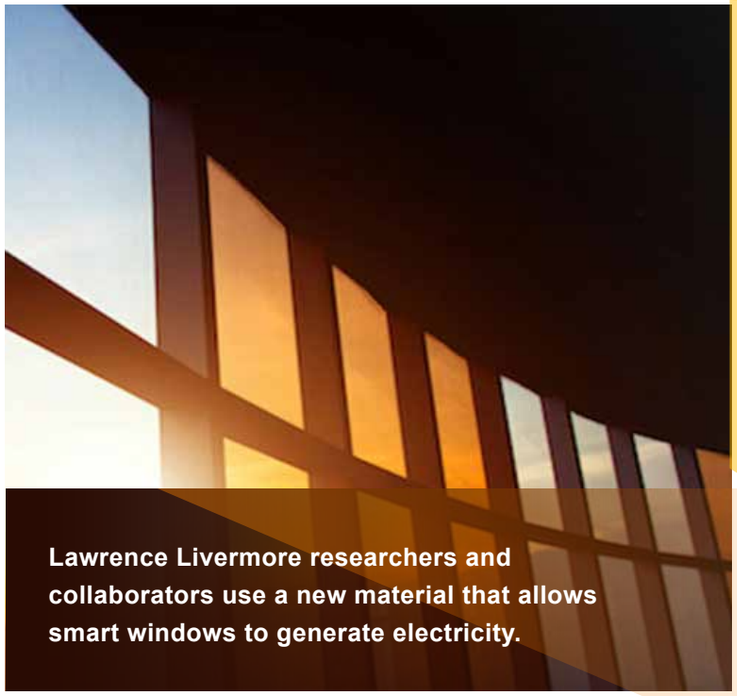
DOE’s Office of Fossil Energy funds $450,000 for the first two private-public partnerships under a new initiative aimed at discovering, designing and scaling up production of novel materials for severe environments.
Read more

A team of researchers, including two from the Lab, identify evidence of early chronic traumatic encephalopathy (CTE) brain pathology after head impact — even in the absence of signs of concussion. Early indicators of CTE pathology not only persist long after injury but also spread through the brain, providing the best evidence to date that head impact, not concussion, causes CTE.
Read more

DOE awards Lawrence Livermore a three-year, $1.5 million grant to improve the growth and efficiency of biofuel-producing algae through the alteration of their microbiomes.
Read more

> “Concussion appears to be distinct from chronic traumatic encephalopathy. This could be game changing. It means that we may need more than a concussion protocol to protect athletes.”
>
> *-William Moss, LLNL physicist*

LOOKING BACK AT 2018



Lawrence Livermore researchers and collaborators use a new material that allows smart windows to generate electricity.

> “It’s amazing to know that we could possibly be the pioneers of a new Lab annual tradition. My favorite memory was watching my teammates run around making plays on the field like we are kids at recess; that’s what it’s all about.”
>
> *-Jason Laurea, Nasty Neutrons quarterback in Nerd Bowl and NIF web developer and photographer*

New research provides answers to a decades-long question: What happens in the short time period following the injection of an electron into water? The research is a result of a collaboration between LLNL, the University of Chicago, the University of California, San Diego and Argonne National Laboratory.
Read more

A team of researchers, including LLNL scientists, discover that a form of perovskite, one of the newest materials in solar research due to its high-power conversion efficiency, works surprisingly well as a reversible photoactive semiconductor material that can be switched between a transparent state and a non-transparent state, without degrading its electronic properties.
Read more

PEOPLE

Lab employee Charles Ball is sworn in as the deputy assistant secretary of Defense for Threat Reduction and Arms Control within the Department of Defense.
Read more

DOE broadcasts a talk by Alveda King, niece of the late Dr. Martin Luther King Jr. on Jan. 25. She shares memories of her uncle, as well as her personal and professional experiences related to her efforts to have a greater impact on humanity.
Read more

The National Council on Radiation Protection and Measurements releases a report that provides guidance on the accrual and control of radiation doses in the emergency phase of a radiological or nuclear incident. LLNL’s Brooke Buddemeier is a member of the writing committee for this report.
Read more

Players representing LLNL, SLAC National Accelerator Laboratory, Sandia National Laboratories/CA and Facebook volunteer their Saturday to prove their nerd supremacy at the inaugural Nerd Bowl flag football tournament. After 12 games, they create what appears to be a new annual tradition for laboratories and tech companies in the Bay Area.
Read more

OPERATIONS

Livermore Information Technology reminds employees that they are prohibited from using Active Directory credentials on personal devices. Employees wanting to connect to the LLNL-GREEN wireless network from a personal device need to create an account on the web just as they would for a guest.
Read more

“LightenUp” is presented as an opportunity to lose 5-plus pounds between January and March and keep it off all year.
Read more

Even though recreational marijuana use is now legal under California law for adults 21 and over, it remains illegal under federal law, and it remains prohibited by Department of Energy order and the LLNL Policy on a Drug-Free Workplace. Similarly, medical marijuana also is prohibited.
Read more

LOOKING BACK AT 2018

Time-integrated image of a laser-driven shock compression experiment to recreate planetary interior conditions and study the properties of superionic water.

“We wanted to teach them about a true engineering design approach, project management and all the things they usually don’t learn until their senior year. And they get to fly drones and have fun. What we’re really after is looking for those students that come up with the best, most innovative ideas and try to get them internships. That’s really the bottom line.”

-Lab’s Engineering Recruitment and Diversity Manager Beth McCormick

The LLNL Laboratory Strategic Infrastructure Group hosts a joint working group meeting with Sandia National Laboratories and the United Kingdom’s Atomic Weapons Establishment.
Read more

FEBRUARY

SCIENCE AND TECHNOLOGY

DOE announces up to $3 million will be available to U.S. manufacturers for public/private projects aimed at applying high-performance computing to industry challenges for the advancement of energy innovation.
Read more

An article authored by a team of LLNL scientists characterizes how different cell membranes behave. One of the team’s images from the work makes the cover of the leading journal of quantitative biology.
Read more

A research team from LLNL, the University of California, Berkeley and the University of Rochester provides experimental evidence for superionic conduction in water ice at planetary interior conditions, verifying a 30-year-old prediction.
Read more

Lawrence Livermore and Lawrence Berkeley national laboratory scientists use some of the world’s most powerful supercomputers to model ground shaking for a magnitude 7.0 earthquake on the Hayward fault and show more realistic motions than ever before.
Read more

LLNL researchers find that sclerostin (a protein that in humans is encoded by the Sost gene) acts as a protective molecule immediately post joint injury to inhibit cartilage loss and joint calcification for patients with a torn anterior cruciate ligament.
Read more

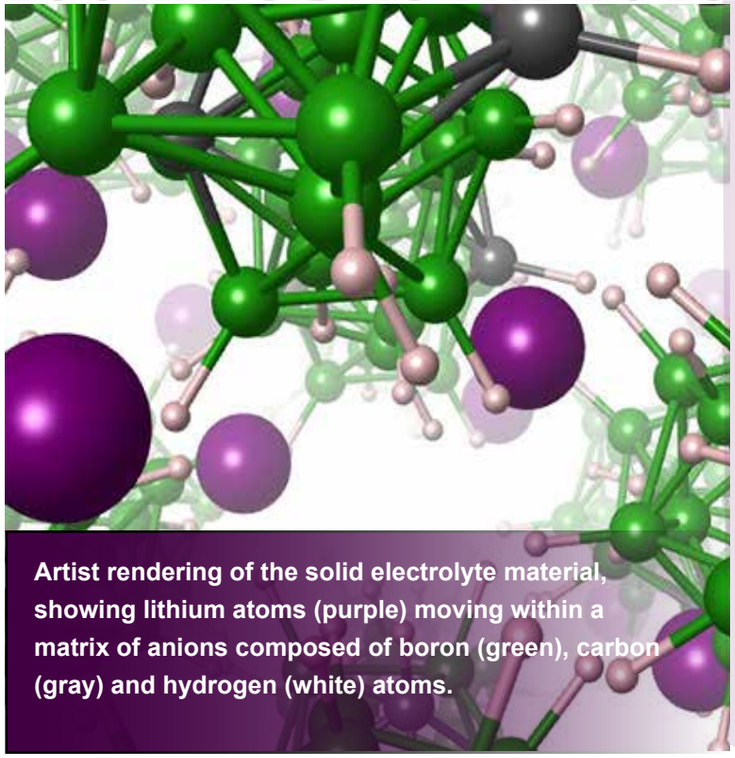
New research by LLNL, Carnegie Mellon University, SRI International and the University of Colorado at Boulder shows that drone-based delivery could reduce greenhouse gas emissions and energy use in the transportation sector.
Read more

LLNL and the United Kingdom’s governing body for scientific research sign a new three-year agreement aimed at improving U.S. and U.K. industries through high performance computing, promoting research collaborations and boosting economic competitiveness in the two countries.
Read more

Officials and top scientists with DOE, the Department of Veterans Affairs and several national labs gather at LLNL for a two-day event to discuss using supercomputing, machine learning, artificial intelligence and other emerging technologies to solve major challenges facing veterans.
Read more

A team of researchers at LLNL responds to a need by investing in “collaborative autonomy,” a broad term describing a network of humans and autonomous machine partners interacting and sharing information and tasks efficiently and in such a way that it doesn’t distract the human operator.
Read more

LOOKING BACK AT 2018



Artist rendering of the solid electrolyte material, showing lithium atoms (purple) moving within a matrix of anions composed of boron (green), carbon (gray) and hydrogen (white) atoms.

> "My favorite part of our project was working hands-on in the laboratory, then running to my office to analyze the data as soon as the experiment was completed. It was exciting to witness the results vary unexpectedly during hydrogenation."
>
> *-Biochemistry summer intern and author Elizabeth Sangalang*

In new research by an international collaboration jointly led by Lawrence Livermore and the National Institute of Standards and Technology, a team discovers why substituting one boron atom for one carbon atom in a key battery electrolyte material made lithium ions move even faster, which is attractive for a more robust solid-state battery.
Read more

DOE announces a funding opportunity totaling $3 million to support projects between U.S. industry and DOE national laboratories related to improving materials in severe or complex environments through the new High-Performance Computing for Materials in Applied Energy Technologies Program.
Read more

PEOPLE

Elizabeth Sangalang, a graduating senior studying biochemistry at California State University East Bay, lands a second-author credential through the research she completed as a summer intern at LLNL.
Read more

President Donald Trump announces his intention to nominate Charles Verdon as the deputy administrator for Defense Programs at the National Nuclear Security Administration. Verdon serves as the principal associate director for Weapons and Complex Integration at LLNL.
Read more

LLNL Director Bill Goldstein visits Lawrence Elementary School to meet the Lawrence "Labs" and be part of the ribbon-cutting ceremony that officially welcomes the school to the Livermore community. Leaders of the Livermore Valley Joint Unified School District and the city of Livermore join the dedication, which takes place at the school's new marquee.
Read more

Lisa Gordon-Hagerty is sworn in by Energy Secretary Rick Perry as DOE's under secretary for Nuclear Security and administrator of the National Nuclear Security Administration (NNSA).
Read more

Stanford University hosts its third annual Women in Data Science Conference and, for the first time, people interested in attending have to go no further than LLNL's High-Performance Computing Innovation Center. The Lab is one of 100 plus locations worldwide that livestream parts of the Stanford conference.
Read more

All Laboratory employees and friends are invited to attend the annual Asian Pacific American Council luncheon celebrating the Chinese New Year and "Year of the Dog."
Read more

OPERATIONS

Lawrence Livermore National Laboratory's popular lecture series, "Science on Saturday," returns to the Bankhead Theater in Livermore.
Read more

The Forensic Science Center (FSC) announces a new, dedicated web presence. Formerly a single page linked from the Global Security website, this site

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An artist's rendition of an internal combustion engine with fuel molecules.

"The chance of an impact appears slim now, but the consequences would be dire."

-LLNL scientist Kirsten Howley

offers more information about the FSC's capabilities in support of LLNL missions.
Read more

The Director's Data Science Initiative transitions into the Data Science Institute (DSI), a new multi-directorate entity supporting growth in this domain. DSI is designed to facilitate mission-driven data science at LLNL through a cohesive vision, increased collaboration and targeted outreach and recruiting.
Read more

MARCH

SCIENCE AND TECHNOLOGY

LLNL scientists, in collaboration with researchers at the University of Saskatchewan, the Carnegie Geophysical Laboratory and the University of Chicago, challenge a basic chemical phenomenon by examining the possible reaction between iron and nickel with xenon at thermodynamic conditions like those found in Earth's core.
Read more

Laboratory researchers receive $1 million from DOE to improve the energy efficiency of copper-based catalysts to convert carbon dioxide into methane and other valuable hydrocarbon products.
Read more

LLNL scientists are part of a national planetary defense team that designs a conceptual spacecraft to deflect Earth-bound asteroids and evaluate whether it would be able to nudge a massive asteroid — which has a remote chance to hitting Earth in 2135 — off course.
Read more

LLNL staff scientists Jonathan DuBois and Eric Holland lead the effort to develop a comprehensive co-design strategy for near-term application of quantum computing technology to outstanding grand challenge problems in NNSA mission space. The initiative aims to design, fabricate, characterize and build quantum coherent devices under the Lab's Quantum Computing Strategic Initiative, designed to solve quantum simulation problems.
Read more

In support of DOE's Co-Optimization of Fuels & Engines initiative, Laboratory scientists develop models of high-performance fuels to see how they would perform in advanced internal combustion engines.
Read more

A special exhibit in downtown Livermore shows how Laboratory researchers use powerful, state-of-the-art tools to gather scientific detail from every conceivable angle, from larger than life to the atomic scale. Imagery captured from these tools, whether it's one of the world's fastest supercomputers to the most powerful microscope, offers a unique interplay between science and art and proves that art is more than paint on canvas, ink on paper or carved wood or stone.
Read more

LLNL leads a new international multi-laboratory and university collaboration for nonproliferation research, supporting the development of detection hardware and algorithms to enable improved nonproliferation detector capabilities for remote monitoring of nuclear reactors.
Read more

Researchers at LLNL successfully print 3D optical-quality glasses, on par with commercial glass products available on the market.
Read more

LOOKING BACK AT 2018

Cadets visit tabletop displays, featuring a variety of Lab organizations involved in research of interest to military programs. U.S. Army cadet Jane Quan looks at an additive manufacturing/3D printing example.

"What you're doing in a lot of different areas has the potential to change the world. The computational capacity, what you have the potential to do, is nothing less than world-changing. This Lab is going to be part of a story, it may not be 10 years from now — it may be sooner than that, of how people's lives really get affected in a positive way."

-Energy Secretary Rick Perry

PEOPLE

Nicolai Martovetsky, chief engineer for the central solenoid effort, leads the International Thermonuclear Experimental Reactor effort, overseeing and evaluating the fabrication and testing efforts of the two dozen U.S. companies responsible for manufacturing and testing the central solenoid's components.
Read more

Reva Nickelson is named the principal associate director for Operations and Business at Lawrence Livermore. Nickelson, who serves as Facilities Division director at Lawrence Berkeley National Laboratory, is chosen for this key senior leadership position at Livermore following a broad national search.
Read more

Energy Secretary Rick Perry makes his first visit to Lawrence Livermore, praising Laboratory employees for "making a difference in people's lives" and reaffirming DOE's commitment to securing the future of its national laboratories.
Read more

Renowned climatologist Ben Santer discusses why and how the scientific community identified human-caused warming signals in the climate system in a Rae Dorough Speaker Series presentation at Livermore's Bankhead Theater.
Read more

OPERATIONS

LLNL welcomes more than 75 cadets and midshipmen from the U.S. Air Force, Army, Marines, Navy and Merchant Marines for the annual Reserve Officers' Training Corps Day.
Read more

Students from Cal Poly's Multicultural Engineering Program, with guidance from Lawrence Livermore engineers, spend months custom-building and testing autonomous and semi-autonomous drones for a Design Challenge at Cuesta College in San Luis Obispo, putting their custom-built drones to the test with scholarships, awards and bragging rights at stake.
Read more

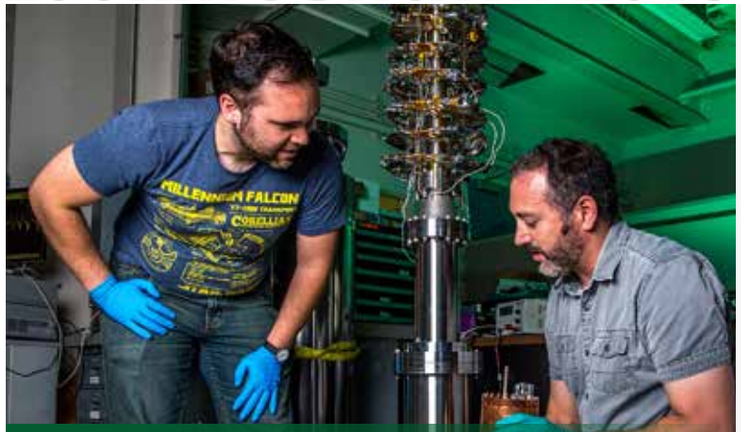
LLNL partners with The State Theatre in Modesto to bring "Science on Screen" to the theater two Saturdays a month in March and April. The 2018 theme of the series is "Marvelous Machines."
Read more

The Lawrence Livermore Laboratory Women's Association offers a variety of activities throughout the month in honor of Women's History Month, highlighting the 2018 national theme, "Nevertheless She Persisted: Honoring Women Who Fight All Forms of Discrimination Against Women."
Read more

Lawrence Livermore's annual report, which summarizes the Lab's myriad achievements during fiscal year 2017, "Science and Technology on a Mission," is available on the web.
Read more

The Lawrence Livermore Laboratory Women's Association sells Easter lilies as part of the organization's first-ever springtime fundraiser for employee scholarships.
Read more

LOOKING BACK AT 2018



LLNL postdoc Nathan Woollett and LLNL staff scientist and ADMX co-spokesman Gianpaolo Carosi work on the cryostat system in which LLNL places its test microwave cavity.

"Vets2Tech is great because it got us here in person and to talk to other veterans who have taken the same path — I think it's effective to show us the possibilities. Being in the military, you have a sense of responsibility for national security. Here you have a lab based on the same principle. If I can be here helping, that's something I'd like to do."

-Student veteran Dan Hempsmeyer

Student veterans from East Bay community colleges visit LLNL as part of a weeklong event connecting veterans to employment opportunities in tech, manufacturing and construction. The Vets2Tech Employer Group shares skill needs and resources for finding veterans and works with local community colleges on developing technology programs to pipeline veterans and other students into their companies.
Read more

More than 50 men and women from organizations across the Laboratory and Sandia attend the "Meeting of the Minds" networking event in celebration of Women's History Month.
Read more

Kim Elam, chair of the Bible Study Group, provides a thought-provoking historical perspective on "Women who Persisted: A Historical Perspective of Women in the Bible," in honor of Women's History Month.
Read more

Public Affairs puts the spotlight on employees via a new publication, appropriately called *Spotlight,* a quarterly look at LLNL employees who make a difference.
Read more

Lab Director Bill Goldstein approves the distribution of a 1 percent Laboratory Strategic Performance Bonus.
Read more

The Office of Chief Information Officer and Livermore Information Technology host 76 students and teachers for the sixth LLNL IT Job Shadow Day.
Read more

Access changes are made to the Limited Area located in the southwest quadrant of the Laboratory.
Read more

The Office of University Relations and Science Education launches a new STEM Outreach Program to allow staff to engage in science, technology, engineering and mathematics (STEM) education outreach activities inside and outside of Lawrence Livermore.
Read more

The Laboratory hosts a visit from Guy Roberts, assistant secretary of defense for Nuclear, Chemical and Biological Defense Programs in the Department of Defense.
Read more

APRIL

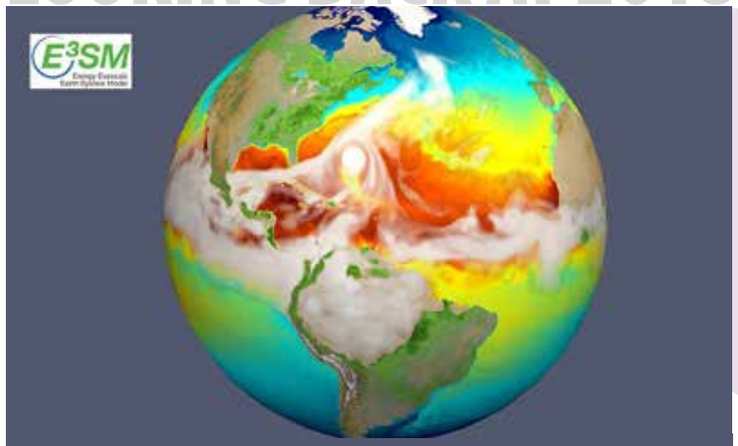
SCIENCE AND TECHNOLOGY

Researchers and clinicians may be able to track the progression of sepsis, a potentially life-threatening condition characterized by an extreme reaction to infection, with more precision and confidence using machine learning models developed at Lawrence Livermore in conjunction with health care provider Kaiser Permanente.
Read more

LLNL researchers develop and test an optical telescope system that can be used for Earth and space observation.
Read more

The Axion Dark Matter Experiment is the world's first and only experiment to have achieved the necessary sensitivity to "hear" the telltale signs of dark matter axions.
Read more

LOOKING BACK AT 2018



The high-resolution E3SM earth system model simulates the strongest storms with surface winds exceeding 150 mph — hurricanes that leave cold wakes that are 2 to 4 degrees Celsius cooler than their surroundings.

An international team of researchers use the Nova Petawatt's successor, the National Ignition Facility's petawatt-class Advanced Radiographic Capability, to develop an experimental platform that promises to turn Nova's surprise discovery into a powerful new source of protons to study the extreme conditions deep inside the planets and the stars, enhance targeted tumor therapy and advance the frontiers of high-energy density science.
Read more

A team of researchers from Lawrence Livermore, Princeton University, Johns Hopkins University and the University of Rochester provide the first experimentally based mass-radius relationship for a hypothetical pure iron planet at super-Earth core conditions.
Read more

The seven-year cycle of scientific assessment driven by the United Nations Intergovernmental Panel on Climate Change begins. Lab scientist Paul Durack is invited to contribute as a lead author for the sixth assessment report, chapter three, "Human Influence on the Climate System."
Read more

A new earth modeling system is unveiled that will have weather-scale resolution and use advanced computers to simulate aspects of Earth's variability and anticipate decadal changes that will critically impact the U.S. energy sector in coming years.
Read more

To better understand the near-term commercial potential for capturing and storing atmospheric carbon dioxide (CO_2), researchers from LLNL map out how CO_2 might be captured from existing U.S. ethanol biorefineries and permanently stored (or sequestered) underground.
Read more

Americans use more solar and wind energy in 2017 compared to the previous year, according to the most recent energy flow charts released by Lawrence Livermore. Overall, energy consumption by the residential and commercial sectors drops.
Read more

Using high-powered laser beams, iron-silicon alloys compress to unprecedented pressures corresponding to the center of a three-Earth-mass extrasolar planet. The resulting measurements of crystal structure and density provide new insights into the nature of the deep interiors of the large, Earth-like planets that have been discovered throughout our galaxy.
Read more

Additive manufacturing goes to the dogs, thanks to LLNL's new approach to training materials. The process prints 3D objects that contain trace amounts of nonreactive explosives, resulting in several advantages for K-9s and their handlers. Chemist John Reynolds leads a team of LLNL scientists and engineers who receive patents for this method and application.
Read more

LLNL researchers Alexander Landa, Per Soderlind and John Klepeis, in collaboration with colleagues from Carnegie Institution of Washington and the Royal Institute of Technology, Sweden, publish an invited review paper in the special issue of *Computation,* "In Memory of Walter Kohn — Advances in Density Functional Theory."
Read more

An LLNL team conducts a thorough assessment of how phospholipid structure impacts stability of biomimetic nanoparticles.
Read more

For the first time, Lawrence Livermore issues state-by-state energy and water flow charts in one location

> ""It's surprising how difficult this training is. Very few dogs have the aptitude for it."
>
> *- Chemist John Reynolds, on additive manufacturing breakthroughs to enhance staff training*

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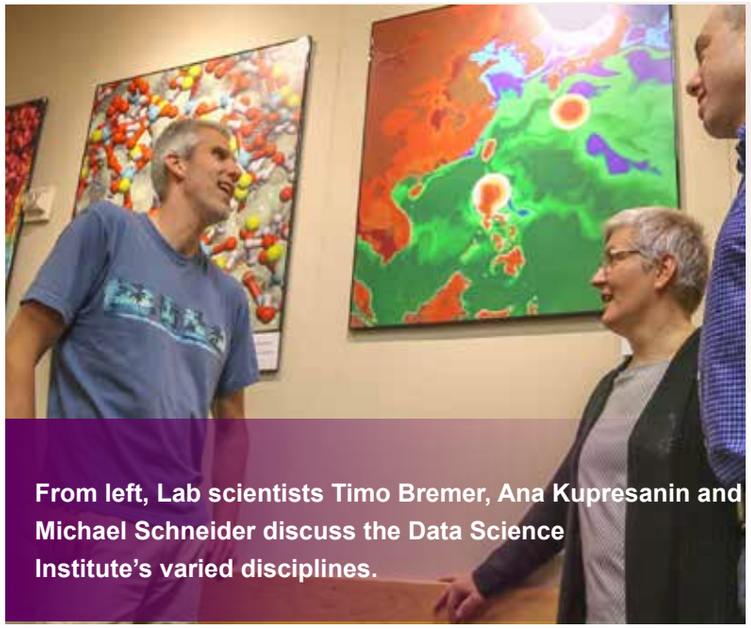
LOOKING BACK AT 2018



From left, Lab scientists Timo Bremer, Ana Kupresanin and Michael Schneider discuss the Data Science Institute's varied disciplines.

"Your spirit and enthusiasm are truly what makes this community and what makes the NNSA family a special place at which to work."

-DOE Under Secretary for Nuclear Security and NNSA Administrator Lisa Gordon-Hagerty

so that analysts and policymakers can find all the information they need in one place.
Read more

PEOPLE

DOE Under Secretary for Nuclear Security and NNSA Administrator Lisa Gordon-Hagerty visits LLNL.
Read more

Laboratory Director Bill Goldstein and senior management meet to discuss Lab priorities and strategies for the future.
Read more

National Ignition Facility tour guides reflect on 15 years of conducting more than 7,000 tours.
Read more

Livermore City Manager Marc Roberts provides employees with an update on the downtown approved plan.
Read more

OPERATIONS

The Data Science Institute at Lawrence Livermore brings together myriad topics considered "data science" under one umbrella, establishing a centralized hub for education, discussion, collaboration and for building a workforce pipeline targeting soon-to-be college graduates.
Read more

Secretary of Energy Rick Perry announces the release of a Request for Proposals for the development of at least two new exascale supercomputers, including LLNL's next-generation system code-named "El Capitan."
Read more

A book by LLNL's Center for Global Security Research explores the military and security implications of emerging and disruptive technologies.
Read more

The 2018 spring hackathon features individual and team efforts in topics from quantum computing and machine learning to differential equations and cybersecurity. One group creates a log file analysis tool from scratch, while another spends its hackathon time working through an Angular 2 online tutorial.
Read more

The annual Good Friday protest at the Laboratory draws nearly 100 people and closes the West Gate entrance. After ritual prayer and songs, 26 protesters are arrested for blocking the roadway.
Read more

A new guest wireless network is available across both sites. The network, LLNL-GUEST, is exclusively for non-LLNL-owned devices. Both employees and LLNL visitors may use the network to gain internet access for their non-LLNL-owned devices.
Read more

The Library invites several major science and engineering publishers to offer seminars on the "Art of Getting Published" as part of its 13th Annual Information Fair.
Read more

The Laboratory launches a new lecture series that is designed to showcase the breadth of Lab research to departments across the University of California campuses. Four Lab scientists are nominated to represent the Laboratory and are invited to speak about their research at department seminars at selected UC campuses.
Read more

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LOOKING BACK AT 2018

Lawrence Livermore researchers (from left) Jenny Wang, Aiden Martin, Nick Calta and Phil Depond are part of a multi-lab team that has successfully designed, built and tested a portable diagnostic machine capable of probing inside metal parts as they're being printed during the laser powder-bed fusion process.

"It is amazing that we are essentially carrying out the same experiments as Rosalind Franklin did on DNA in 1952, which led to the discovery of the double helix, but now we are reaching the level of single molecules."

-Henry Chapman,
scientist at Center for Free-Electron Laser Science

DOE holds a "Millennial Nuclear Caucus" to reach out to "young leaders" in nuclear science and hear their vision for the future.
Read more

LLNL Director Bill Goldstein thanks everyone who took time out to respond to the Safety Culture Survey and urges employees to participate when invited via email this year.
Read more

Lawrence Livermore National Laboratory celebrates Earth Day together with Sandia National Laboratory at the Sandia open area farmers market event.
Read more

A contingent of U.S. Environmental Protection Agency radiation managers from regions throughout the country visit LLNL to learn about the Lab's radionuclide characterization tools and their applications. The group is hosted by the NNSA Livermore Field Office and the Lab's Environmental Restoration Department.
Read more

The LabBook service retires to meet computer security requirements. This service is replaced with a new application that will provide a social platform for employees to connect with coworkers via personal profile pages, group sites and blogs.
Read more

The Get Active program premieres with a new twist: "Finding the Fittest Principal Associate Directorate at the Lab." LLNL has traditionally competed against other labs in the DOE complex for the title of Fittest Lab, twice taking home that honor in the last five years.
Read more

The Lawrence Livermore Laboratory Women's Association presents its annual scholarship awards totaling $8,000 to 15 recipients.
Read more

MAY

SCIENCE AND TECHNOLOGY

LLNL scientists and collaborators determine how and when Mars' crustal topographic and geophysical divide formed by applying radioisotopic dating techniques to a Martian meteorite found in the Sahara Desert.
Read more

LLNL researchers develop a new biological identification method that uses proteins from bones.
Read more

A collaboration between LLNL and Oak Ridge National Laboratory leads to the installation of the Precision Reactor Oscillation and Spectrum Experiment, a novel antineutrino detector that will explore the existence of new forms of matter.
Read more

A multi-lab team including LLNL researchers successfully design, build and test a portable diagnostic machine capable of finding defects in 3D-printed metal parts.
Read more

Experiments shed new light on the after-effects of supernova explosions. The results may inform efforts to achieve self-sustaining nuclear fusion.
Read more

Lab scientists and collaborators develop a new method for revealing the structure of fibrous clusters in the brain linked to Alzheimer's and Parkinson's.
Read more

LLNL's work in combustion kinetics is featured in the annual DOE Co-Optimization of Fuels & Engines report.
Read more

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LOOKING BACK AT 2018

Melia Alcuran, chair of the Asian Pacific American Council, takes a moment to enjoy a shaved ice treat at the APAC festival.

> "We need to cast a wider net to meet our workforce needs, developing a culture that attracts diversity."
>
> *-Associate Director for Computation Bruce Hendrickson*

The Lab's Nondestructive Characterization Institute receives three research and development contracts worth more than $7 million to work on aviation security.
Read more

LLNL researchers lend their expertise in metal additive manufacturing to a new collaboration with the Office of Naval Research and GE Global Research.
Read more

LLNL and LBNL scientists simulate the life and death of a neutron using supercomputers at LLNL and Oak Ridge.
Read more

Lawrence Livermore scientists and collaborators figure out a way using an X-ray Free Electron Laser to heat water to temperatures above 100,000 K (179,540 degrees Fahrenheit) and pressures above 1 Mbar (1 million times Earth's atmospheric pressure), where the liquid transitions into warm dense matter.
Read more

PEOPLE

More than 100 students from Bay Area schools visit LLNL as part of STEM Day at the Lab. Students enjoy a day of interactive science activities including the Fun With Science program.
Read more

Lawrence Livermore and Sandia employees hit the road during the 24th annual Bike to Work Day. More than 226 people visit the energizer station to refuel and celebrate the day.
Read more

The Lab comes alive with nearly 600 children of employees as part of "Take Our Daughters and Sons to Work Day."
Read more

OPERATIONS

Representatives from more than 30 companies in the additive manufacturing, automotive and aerospace industries get their first glimpse at LLNL's newest facility, the Advanced Manufacturing Laboratory, located in the Livermore Valley Open Campus.
Read more

The University Relations & Science Education Program hosts a biotechnology summer experience for high school students age 16 and older to engage in a research project in molecular biology and bioinformatics.
Read more

Employees celebrate Asian Pacific Heritage Month with various events at the Lab: The Asian Pacific American Council (APAC) awards four high school seniors with scholarships: Read more • Employees enjoy food, cultural booths and entertainment at the Asian Pacific American Heritage Month festival. The festival's theme is "Unite Our Vision by Working Together." Read more
• APAC holds a multicultural panel discussion entitled "Coming to America." Read more

LLNL staff and Cyber Defender interns conduct the CyberCraft Cyber Challenge for finalists at the National Science Bowl in Washington, D.C. The jeopardy-like capture-the-flag system developed at LLNL tests the computer savvy of competitors.
Read more

The Laboratory's Take 5 for Safety & Security campaign gauges progress and assesses opportunities for improvement through an electronic employee feedback survey.
Read more

Lawrence Livermore National Security, LLC opens applications for its annual Community Gift Program.
Read more

The L3-HAPLS advanced petawatt laser system is fully integrated and operational at the ELI Beamlines Research Center in Dolní Břežany, Czech Republic, and is ready for integration with the experimental systems and first experiments.

"I am often more creative while running or riding. Because scientists are passionate, we think about physics all the time. I find breakthroughs as often in my office as while climbing the hilly roads around the Lab."

-Lab scientist Marius Millot

JUNE

SCIENCE AND TECHNOLOGY

Using machine learning, evolutionary algorithms and other advanced computational techniques, Lawrence Livermore researchers successfully model how atoms are arranged between the crystals that make up most materials, a development that could impact how future materials are designed and optimized.
Read more

LLNL scientists begin a two-year project with private power management company Eaton Corporation to develop and commercialize a simulation tool capable of performing coupled simulations of transmission and distribution grids, with a goal of taking the software to market for the power industry to use.

Read more

An experimental campaign conducted at Lawrence Livermore's National Ignition Facility achieves a total fusion neutron yield of 1.9e16 ($1.9x10^{16}$) and 54 kilojoules of fusion energy output — double the previous record. Researchers in LLNL's Inertial Confinement Fusion Program detail the results in *Physical Review Letters.*
Read more

The Lab looks back at the Plowshare Program, a historical project meant to develop the necessary technology for using nuclear explosions for civil and industrial projects.
Read more

An international team of researchers, including those from Lawrence Livermore, find a new way to investigate how tuberculosis bacteria inactivates an important family of antibiotics. They observe the process in action for the first time using an X-ray free-electron laser.
Read more

LLNL's next-generation supercomputer, Sierra, is named the third-fastest computing system in the world, according to the TOP500 list announced at the International Supercomputing Conference in Frankfurt, Germany.
Read more

The program to extend the life of the W80 nuclear warhead achieves a significant milestone as NNSA gives passing grades to the plans to refurbish certain components and the proposed approach to developing component cost estimates.
Read more

A report co-authored by an LLNL engineer concludes that the U.S. should engage in a multi-agency, public/private effort to accelerate metamaterials manufacturing so that it can become more viable in the industrial sector.
Read more

After evaluation by an international peer review group, the L3-HAPLS advanced petawatt laser system — designed, developed and constructed by Lawrence Livermore — is declared fully integrated and operational at the ELI Beamlines Research Center in Dolní Břežany, Czech Republic.
Read more

A team of scientists from Lawrence Livermore and Texas A&M University get a step closer to understanding radiation damage phenomena, finding that the density of collision cascades has a profound effect on defect interaction dynamics in silicon.
Read more

PEOPLE

Marius Millot, a physicist at Lawrence Livermore's High Energy Density Science (HEDS) Center, details

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LOOKING BACK AT 2018

During a postdoc poster session, Xavier Lepro Chavez explains his research about "Design, Synthesis and Doping of Polymers by Initiated Chemical Vapor Deposition: An Alternative for CH Shell Ablators in NIF."

"I've always looked at the glass as half-full and not half-empty. Every decision I was making to try to become an astronaut was actually helping my career at the Lab. The worst that could happen is I would have a great career (here), which wasn't a bad consolation prize. The moral is, you've got to enjoy the journey."

-José Hernandez, former LLNL employee and astronaut

his journey from a curious schoolchild in France to breakthrough researcher.
Read more

The Office of the Director of National Intelligence selects LLNL's Nils Carlson, Z Program manager in Global Security, to serve as the National Intelligence Manager for Space and Technical Intelligence.
Read more

Annie Kersting, Lawrence Livermore's director of University Relations and Science Education, spends an evening in May with Oakland public middle and high school students talking about careers in science. The program's goal is to inspire a generation of future scientists and to support teachers.
Read more

José Hernández, former Lawrence Livermore engineer, returns to the Lab to share his journey to becoming a NASA astronaut, which includes a 15-year career at LLNL, time spent in the zero-gravity of low-earth orbit aboard the space shuttle Discovery and a congressional run at the personal urging of President Barack Obama.
Read more

Lawrence Livermore's postdoctoral fellows and graduate research scholars show the fruits of their labor and present on their work at the Postdoctoral Poster Symposium, from investigating microseismic events to the search for dark matter.
Read more

Middle and high school students who want to burnish their cybersecurity skills — or learn more about careers in computer science and cybersecurity — attend a workshop held at the Livermore Public Library and hosted by the LLNL Cyber Defenders program.
Read more

Young Professionals in Energy Sacramento chapter hosts a discussion on carbon capture, utilization and sequestration, including expert Susan Carroll, deputy leader for science and technology in the Atmospheric, Earth and Energy Division office.
Read more

Lawrence Livermore computational biologist Felice Lightstone serves as a panelist at a major Hollywood forum, the inaugural Variety Summit about gender disparities in the media and entertainment industries.
Read more

Renée Breyer is selected as LLNL's associate director for Strategic Human Resources Management.
Read more

OPERATIONS

The Lab's University Relations and Science Education Program partners with the Livermore Lab Foundation to broaden its reach and offer an immersive 10-day biotechnology summer experience for students 16 and older to engage in a research project in molecular biology and bioinformatics.
Read more

National Lab Day, often held in Washington D.C., takes place in Fairbanks at the request of Alaska Sen. Lisa Murkowski. The meeting fosters partnerships between the labs and the University of Alaska to advance Alaska's and the nation's goals for growing the economy, developing and implementing sustainable energy solutions and understanding the implications of a changing Arctic environment.
Read more

The Lab celebrates safety, security and classic cars at the annual Environment, Safety, Security and Health Fair.
Read more

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A new study in which Lawrence Livermore scientists compared drug responses in the brains of rodents to drug responses of brain cells cultured in Lab-developed "brain-on-a-chip" devices may be a critical first step to validating chip-based brain platforms.

> "We are excited that HPC is gaining traction in the manufacturing section, as evidenced by the large number of proposals received in this solicitation — a 50 percent increase compared to previous solicitations."
>
> *-Lori Diachin, director of the HPC4Mfg program*

Employees and summer students celebrate Juneteenth, also known as "Freedom Day" or "Emancipation Day," with music, networking and a barbecue at the bosque.
Read more

Construction crews, along with officials from Lawrence Livermore and Sandia national laboratories and NNSA, break ground on a long-awaited large-scale electrical distribution project that will provide safe and reliable redundancy power for the National Ignition Facility, Sandia-California and the Livermore Computing Center.
Read more

JULY

SCIENCE AND TECHNOLOGY

LLNL scientists develop a plasma-flow reactor to experimentally simulate the late cooling of post-detonation fireballs where temperature drops below 10,000 K. The reactor will help researchers better understand fallout formation from a nuclear explosion.
Read more

For the first time, LLNL scientists show that human influences significantly impact the size of the seasonal cycle of temperature in the lowest layer of the atmosphere.
Read more

Lawrence Livermore scientists take a first critical step to validate chip-based brain platforms in a study that compares drug responses in the brains of rodents to drug responses of brain cells cultured in Lab-developed "brain-on-a-chip" devices.
Read more

LLNL researchers publish a special feature paper in the *Proceedings of the National Academy of Science* on recent experiments and techniques designed to improve understanding of hydrodynamic instabilities in high-energy density settings, like NIF experiments.
Read more

LLNL scientists propose the next generation of experiments that aim to determine features of the elusive particle known as a neutrino. The research could provide a glimpse into the nature of the universe during the earliest moments of the Big Bang.
Read more

The National Ignition Facility sets a new record, firing 2.15 megajoules (MJ) of energy to its target chamber — a 15 percent improvement over NIF's design specification of 1.8 MJ, and more than 10 percent higher than the previous 1.9 MJ energy record set in March 2012.
Read more

LLNL researchers apply high-performance computing to improve their understanding on traumatic brain injury. The research aims to enable a precision medical approach for treating TBI.
Read more

PEOPLE

Lori Diachin, a 15-year veteran of the Computation Directorate at LLNL, is named the new deputy director of the Department of Energy's Exascale Computing Project.
Read more

In his Director's Update, Bill Goldstein reviews the slew of positive news for the first half of 2018, including "uniformly positive" interim grades from the National Nuclear Security Administration for FY18, the acceptance and impending implementation of the Nuclear Posture Review and its escalating demand for work in Life Extension Programs, support for rebuilding NNSA capabilities and a favorable federal budget outlook.
Read more

Lawrence Livermore computer scientist Punita Sinha returns from an offsite assignment, having spent the past

LOOKING BACK AT 2018

Lawrence Livermore physicist Finn O'Neill Rebassoo in front of the CMS detector. The detector is 21.6 meters long, 15 meters in diameter and weighs about 14,000 metric tons.

two years helping the Laboratory's largest sponsor make the case for exascale computing.
Read more

Prominent rock 'n' roll photographer Tom Gundelfinger O'Neal addresses a packed auditorium, opening his talk with how impressed he was with LLNL and its important work.
Read more

OPERATIONS

The Veterans in Energy Technology & Science partner with the office of Diversity and Inclusion to raise funds for military families at their annual "Fourth of July" themed barbecue.
Read more

More than 400 students, employees and others stream through the Central Cafeteria to check out 40 technology exhibits and talk to researchers during the fourth Global Security Road Show.
Read more

Construction is set to begin on a canopy over the three in-bound lanes at the Laboratory's 24/7 East Avenue entrance.
Read more

College students participate in LLNL's 3D Design Summer Academy, hosted by the University Relations and Science Education Program. Participating students learn about cutting-edge scientific research conducted at the Laboratory and experience the nature of science through direct involvement and use of equipment, processes and practices found in research labs.
Read more

Summer students and new employees arrive to newly refurbished trailers funded by Livermore's Infrastructure Strategic Advisory Group. Trailers 6929 and 6930 were renovated in an effort to encourage robust collaborations and a stronger sense of community among the employees and make room for the growing population.
Read more

Nine students are awarded Laboratory-sponsored science, technology, engineering and math scholarships at the banquet for the Society of Women Engineers.
Read more

The third annual Livermore Library "Cyber Defense Challenge" takes place at the Livermore Civic Center Library. LLNL's Computation employees and Cyber Defender summer interns volunteer their time to lead the exercise for community children in grades 6-12.
Read more

LLNL announces its intention to issue a special High-Performance Computing for Manufacturing Program solicitation focused on steelmaking and aluminum production. Up to $1.2 million in federal funds will be available to support as many as four new awards to companies to leverage supercomputing capabilities across the national laboratories.
Read more

> "Understanding material properties at the macro level based on atomic scale effects is a sweet spot for HPC capabilities. New materials are essential for improved energy efficiency in electrical power plants and advanced vehicles."
>
> *-Acting HPC4Materials Director Robin Miles on the HPC4Materials program.*

AUGUST

SCIENCE AND TECHNOLOGY

Lawrence Livermore researchers contribute to the discovery of the Higgs boson particle transforming into bottom quarks as it decays in a series of experiments at CERN. The research is a big step forward in the quest to understand how the Higgs boson enables fundamental particles to acquire mass.
Read more

A team of LLNL scientists bolster theoretical understanding of nuclear fission chains as a method of analyzing nuclear

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LOOKING BACK AT 2018

Unraveling the properties of fluid metallic hydrogen at the National Ignition Facility could help scientists unlock the mysteries of Jupiter's formation and internal structure.

> "We wanted to know if we could precisely control the spiking activity of densely intermingled neuron types in mice hippocampus; we were ecstatic to see that we can."
>
> *-LLNL scientist Komal Kampasi*

materials. The work is a big step toward improved detectors for use by nuclear emergency teams and safeguards specialists.
Read more

LLNL researchers develop deep learning systems to advance nuclear nonproliferation analysis. This capability could help prevent rogue states or nefarious actors from building a nuclear weapon.
Read more

An LLNL engineer collaborates to control neurons with light, a major step forward in attempting to gain a better understanding of how the brain works in hopes of discovering cures for debilitating neural disorders such as post-traumatic stress disorder and Alzheimer's disease.
Read more

A team of LLNL and Virginia Tech researchers achieve a breakthrough by producing micro-architectured 3D graphene aerogel structures with higher resolution and complexity than anything created before with other 3D printing methods.
Read more

A team led by LLNL researchers reveals how hydrogen becomes metallic inside gas giant planets, solving a long-standing scientific challenge.
Read more

LLNL researchers provide a theoretical explanation for why magnetic fields suppress the circulation of the atmosphere in gas giant planets.
Read more

DOE funds new research into using microbes to convert carbon dioxide directly into renewable natural gas. The approach could provide a cost-effective option to reduce greenhouse gas emissions.
Read more

LLNL researchers initiate a new initiative to collect, archive and document climate data sets to support the coordinated modeling activities that study past, present and future climates. Although climate models have improved over time, no single model perfectly represents all aspects of the climate system. This initiative aims to change that.
Read more

The FDA approves the use of a medical device in humans that utilizes an LLNL-developed shape memory technology. The device has immense potential to replace current embolization technologies, which generally employ metal coils that can tear through blood vessel walls.
Read more

LLNL researchers get a new tool in the hunt for black holes with the opening of the Lab's new telescope remote observing room. The new facility enables the researchers to control the National Optical Astronomers Observatory Blanco 4-meter telescope located in Chile at the Cerro Tololo Inter-American Observatory.
Read more

PEOPLE

U.S. Representative Jeff Denham visits Site 300 to learn about the Laboratory's counterterrorism, counterproliferation and stockpile stewardship research, as well as an air permit application submitted by NNSA to increase Site 300 research that supports these missions.
Read more

OPERATIONS

LLNL's Engineering Directorate inducts a brand new crop of apprentices into the Machinist Apprentice Program. More than 150 people have graduated from the program since it began in the 1950s.
Read more

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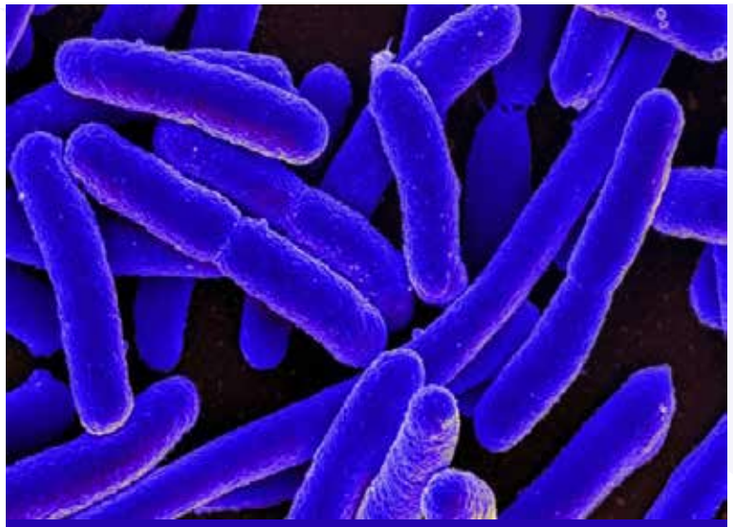
LOOKING BACK AT 2018



A colorized scanning electron micrograph of *Escherichia coli (E. coli)*. LLNL researchers and their collaborators develop a new system to control gene expression in laboratory bacteria, including *E. coli.*

"With more data becoming available, we have more ideas about how buildings behave, and how the peak forms."

-LLNL power systems researcher Jhi-Young Joo, on improving energy efficiency in buildings

DOE funds a fifth round of projects in the High Performance Computing for Manufacturing program, bringing the total investment to $3.8 million. The program pairs computational expertise within the Laboratory with American manufacturers.
Read more

The Integrated Planning Group meets at LLNL to plan the development of the FY20 Stockpile Stewardship and Management Plan, an annual federal document describing the NNSA program of record for ensuring a safe, secure and reliable nuclear stockpile.
Read more

The LLNL Data Science Institute hosts its inaugural offsite workshop, drawing more than 200 people to share its work and explore innovative techniques in all fields of data science.
Read more

LLNL employees strut their talents in the latest Music at the Bosque Lab Talent Showcase. Soloists, musicians and dancers take center stage, providing top-notch entertainment for colleagues who came out to show their support.
Read more

LLNL hosts a three-day meeting about explosives work that was two years in the making, drawing representatives of the U.S. Department of Justice's Bureau of Alcohol, Tobacco, Firearms and Explosives and the Institute of Makers of Explosives.
Read more

The brain trust of missile defense gathers at LLNL or a first-of-a-kind meeting on the use of directed energy technologies — like high-powered lasers and high-power microwave systems — for the Department of Defense Missile Defense Agency.
Read more

Students showcase their research with Lab employees at the annual poster symposium. A total of 289 posters are displayed during the two-day, three-session symposium, with 28 students receiving recognition awards.
Read more

SEPTEMBER

SCIENCE AND TECHNOLOGY

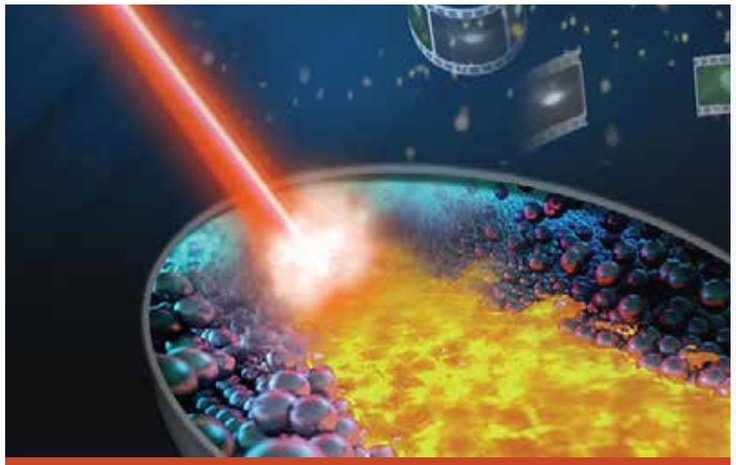
The microbial production of enzymes, chemicals and fuels could become more efficient and economical with a newly engineered system for controlling genes called "Jungle Express."
Read more

The DOE's Building Technologies Office within the Office of Energy Efficiency & Renewable Energy awards LLNL researchers $3 million for a three-year project aimed at using building energy more efficiently to shave peak electric energy usage.
Read more

Lawrence Livermore engineers and scientists develop a new technique that enhances the performance of Lab-developed flexible thin-film biological sensors, increasing the sensitivity of the implantable arrays to chemicals for biosensing applications, among other performance improvements.
Read more

A team of LLNL scientists reach an important milestone in the development of a novel experimental capability when they achieved first plasma and neutron yield with a megajoule-scale dense plasma focus Z-pinch neutron source.
Read more

LOOKING BACK AT 2018



Lawrence Livermore National Laboratory researchers develop machine learning algorithms capable of processing the data obtained during metal 3D printing in real time and detecting within milliseconds whether a 3D part will be of satisfactory quality.

"It's been pretty amazing. It wrecks my inbox — I get 200 emails a day about Spack from GitHub and the mailing list — but the momentum is great. We continue to drive development, and we review features and merge bug fixes, but the community helps tremendously with new ideas, new features and regular maintenance. I don't think we could sustain a project of this scale without their help."

-LLNL computer scientist and Spack creator Todd Gamblin

The National Science Foundation awards Georgia Tech and Lawrence Livermore and Oak Ridge national laboratories a $1.15 million, three-year grant to study the microbes in peat moss. The goal of the project is to understand the microbiome's role in nutrient uptake and the methane dynamics of wetlands and the impact of climate change on these activities.
Read more

A team of Lab researchers report developing convolutional neural networks, a popular type of algorithm primarily used to process images and videos, to predict whether a 3D-printed metal part will be good by looking at as little as 10 milliseconds of video.
Read more

A team of LLNL researchers, along with collaborators from the University of Richmond and Texas A&M University, develop a novel technique for measuring reactions involving nuclei that are too short-lived to be made into targets.
Read more

Spack, an LLNL-developed open source package manager optimized for high performance computing, makes waves throughout the HPC community.
Read more

In a study involving a Lawrence Livermore scientist, researchers at the Massachusetts Institute of Technology, Argonne National Laboratory and other institutions, capture 3D images of microscopic cracks in metal caused by exposure to hydrogen, also known as hydrogen embrittlement.
Read more

A team of scientists and physicists headed by the Lawrence Livermore and Lawrence Berkeley national laboratories is named as one of six finalists for the prestigious 2018 Gordon Bell Award, one of the world's top honors in supercomputing.
Read more

The Department of Energy announces the first round of awardees for the new HPC4Materials Program, a public-private effort aimed at using high-performance computing to advance U.S. industry's discovery, design and development of materials for severe environments.
Read more

PEOPLE

The U.S. Senate confirms Charlie Verdon as deputy administrator for Defense Programs at the National Nuclear Security Administration in Washington, D.C. Read more • With his Senate confirmation, Verdon announces that he will retire from the Laboratory Oct. 1.
Read more

Director Emeritus Bruce Tarter discusses his book, "The American Lab," the first comprehensive history of Lawrence Livermore.
Read more

OPERATIONS

The California Council on Science & Technology's 2018 policy fellows visit Livermore for briefings and facility tours at both Lawrence Livermore and Sandia Labs/California
Read more

LLNL hosts the Department of Defense Munitions Technical Advisory Board for an annual review of three joint programs operated by the Office of Land Warfare and Munitions.
Read more

Sponsored by the Physical and Life Sciences and Engineering directorates, the newly refreshed summer

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LLNL engineer Daniel McCartt is building a tabletop laser-based carbon-14 spectrometer that is 200 to 300 times more sensitive than tools on the market today.

> “Our team believes that if major progress could be made to curb metastatic cancer, that it could possibly be an important step toward someday defeating cancer.”
>
> *-LLNL biologist Gaby Loots, whose team has studied how cancer spreads through the body using ultra-precision accelerator mass spectrometry technology*

program known as the Materials and Chemistry Institute offers a unique experience for undergraduate and graduate students alike.
Read more

A new emergency notification system launches at the Lab.
Read more

The Laboratory launches a new Offsite Fellows Program to better position LLNL subject matter experts within the U.S. government and to leverage offsite assignments to help develop these experts into future leaders when they return to the Laboratory.
Read more

OCTOBER

SCIENCE AND TECHNOLOGY

An international collaboration led by Deutsches Elektronen-Synchrotron and consisting of more than 100 researchers, including three Lawrence Livermore scientists, announces the results of the first scientific experiments at Europe’s new X-ray laser, the European XFEL.
Read more

The Nobel Prize-winning research by Donna Strickland, a former staff scientist LLNL’s Laser Programs Directorate, is instrumental in the Laboratory’s development of a series of groundbreaking short-pulse, high-energy laser systems over the past two decades.
Read more

A team of theorists from Lawrence Livermore solves a long-standing puzzle in the nucleation of a high-pressure phase of ice known as ice VII, which is believed to exist near the core of “ocean world” planets detected outside of the solar system and has recently been discovered to exist within the Earth’s mantle.
Read more

The fundamental goal of the W80-4 Life Extension Program is the design and production of a safe and reliable system; ensuring long-term viability and chemical compatibility of the materials in the system is paramount to success. To achieve that goal, LLNL and Sandia jointly plan and start the first in a series of long-term system-level material compatibility tests.
Read more

A new kid is coming to town in the form of an ultra-sensitive, laser-based, carbon-14 spectrometer that will be able to measure samples as small as one microgram of carbon.
Read more

A team of scientists at Lawrence Livermore shows that the structure of microscopic pores in high-explosive materials can significantly impact performance and safety. These findings open the door to the possibility of tuning high explosives by engineering their microstructure.
Read more

For the first time, researchers develop a way to determine how many cancer cells it takes to initiate a tumor in another part of the body.
Read more

LLNL researchers work to make better electronic devices by delving into the way nanocrystals are arranged inside of them.
Read more

Black holes are among the most elusive objects in the universe, but research out of Lawrence Livermore suggests the remnant cores of burned-out stars could

LOOKING BACK AT 2018

Sierra, one of the fastest supercomputers in the world, will serve NNSA's three nuclear security laboratories, providing high-fidelity simulations in support of NNSA's core mission of ensuring the safety, security and effectiveness of the nation's nuclear stockpile.

"Throughout my career, I've worked with great men and women. I wish I had time to name them all now. I took out lifelong loans by borrowing many life lessons from them. I'm extremely grateful for the Lab career I had through which I experienced disappointments, successes, setbacks and switched priorities, all requiring recalculations."

-Lab retiree Kinnon Ernst, reflecting on her career during her keynote talk at the LLLWA luncheon

be the key to making the first observation of the most elusive class of black holes.
Read more

The DOE's National Nuclear Security Administration, LLNL and its industry partners unveil Sierra, one of the world's fastest supercomputers, at a dedication ceremony to celebrate the system's completion.
Read more

The DOE deems LLNL as one of nine facilities operating high-intensity, ultrafast lasers. DOE's Office of Fusion Energy Sciences within the Office of Science awards the new research network, called LaserNetUS, $6.8 million over the next two years.
Read more

PEOPLE

Eleven postdoctoral finalists present three-minute, three-slide talks about their research before a distinguished panel of judges and live audience at the 2018 Postdoc Research Slam.
Read more

The Lawrence Livermore Laboratory Women's Association holds its annual scholarship fundraising luncheon with more than 220 women and men attending the popular event held at Concannon Vineyards.
Read more

Congressman Eric Swalwell's district office hosts its annual Congressional App Challenge for middle and high school students in the 15th congressional district in the Lab's High-Performance Computing Innovation Center in the Livermore Valley Open Campus.
Read more

Chris Spadaccini, Lawrence Livermore's director of the Center for Engineered Materials and Manufacturing, appears on Capitol Hill for a congressional briefing on a recent report on metamaterials manufacturing, presenting the report's conclusions and recommendations.
Read more

LLNL's Brooke Buddemeier is elected to be incoming president of the Health Physics Society's Homeland Security Section.
Read more

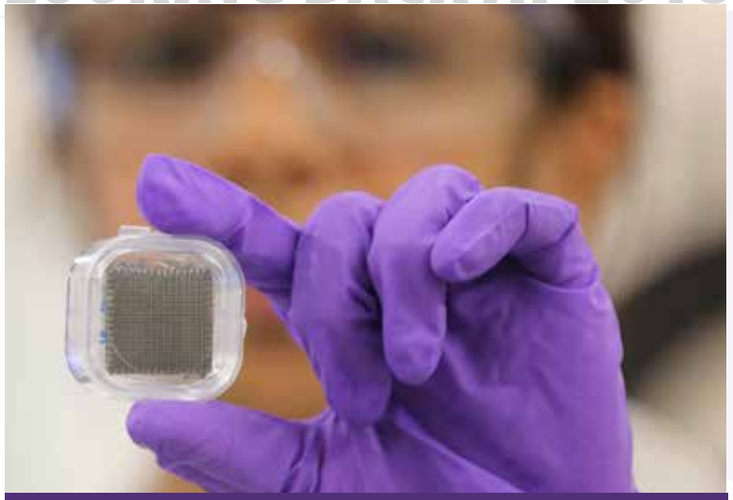
John Elder Robison, *New York Times* bestselling author, draws a crowd of more than 200 employees for an inspiring presentation where he discusses his journey of living life with Asperger's syndrome.
Read more

The Laboratory hosts the 14th edition of the Applied Antineutrino Physics Workshop at the Martinelli Event Center. More than 75 physicists, representing more than 20 experimental efforts and 11 countries, reflecting the very active state of this field, attend the workshop.
Read more

OPERATIONS

The Weapons and Complex Integration Directorate celebrates the opening of a new "Stockpile Stewardship Zone" in the Laboratory's public visitor center — the Discovery Center — with an open house.
Read more

Nearly 2,500 Lawrence Livermore National Laboratory employees come out for sun, fun, music, camaraderie and hot dogs at the "Celebrating Excellence" Labwide employee barbecue.
Read more



Researchers from Lawrence Livermore National Laboratory and UC Santa Cruz, including LLNL scientist Swetha Chandrasekaran (pictured), demonstrate 3D-printed graphene aerogel supercapacitors that resulted in record-breaking electric charge storage and "remarkable" energy density.

"These are some of the largest simulations of this type ever published, when considering the size of the system, the length of the simulations and the complexity of the membrane."

-Lab computational biophysicist Tim Carpenter, referring to cell membrane simulations

NOVEMBER

SCIENCE AND TECHNOLOGY

The Defense Advanced Research Projects Agency holds its 60th Anniversary Symposium, at which an exhibit for the Systems-Based Neurotechnology for Emerging Therapies program featured the flexible neural multielectrode arrays developed by LLNL.
Read more

They say everything's bigger in Texas, and the 30th anniversary of the annual International Conference of High-Performance Computing, Networking, Storage and Analysis does not disappoint. The conference, which breaks records for attendees and exhibitors, sees LLNL once again make its presence felt on the world's biggest HPC stage.
Read more

The U.S. Department of Energy's High-Performance Computing for Energy Innovation Initiative issues its first joint solicitation for the High-Performance Computing for Manufacturing Program and the High-Performance Computing for Materials Program. The initiative is headed up by LLNL.
Read more

Researchers at LLNL and the University of California, Santa Cruz create 3D-printed supercapacitor electrodes capable of achieving record-breaking performance and overcoming conventional tradeoffs for supercapacitors in the process.
Read more

New research by a Lawrence Livermore scientist and collaborators show that Arctic sea ice loss is enhanced by natural climate fluctuations such as El Niños and La Niñas. With manmade greenhouse gases on top of the natural climate variability, the decrease in sea ice is even more severe than climate models originally estimated.
Read more

A group of researchers from Lawrence Livermore visits the Cancer Registry of Norway in Oslo to discuss the progress of ongoing collaborations between the two institutions aimed at applying big data analytics to predicting cancer risk and mortality.
Read more

A three-year project at Lawrence Livermore attempts to address challenges to the electrical grid by using a new algorithm called "Squirrel" to model power outages and enable government agencies and utilities to automatically identify weaknesses in the power grid.
Read more

Lawrence Livermore and Las Positas College partner on a special presentation, "Theory to Practice: How Science Is Done," as part of the Science and Engineering Seminar Series. The series provides LLNL scientists and engineers a forum to share basic and applied research with students, faculty and the Tri-Valley community.
Read more

Using a three-year, $732,177 DOE grant, LLNL works to link the effects of additional nitrogen on soil-dwelling microbes' ability to break down, consume or stabilize soil carbon.
Read more

LLNL, in partnership with Penguin Computing, AMD and Mellanox Technologies, accepts delivery of Corona, a new unclassified high-performance computing cluster that will provide unique capabilities

LOOKING BACK AT 2018

Former LLNL director John Nuckolls (right) accepts the fourth John S. Foster Jr. Medal from the award's namesake.

"My favorite part of STEM Day was learning about the artist who makes posters and other creative scientific advertisements. I am interested in being a scientist and I would like to work at the Lab as an artist and scientist who explains science through art."

-Diana Hutchings, an eighth-grade student from St. Bernard's Catholic School.

for Lab researchers and industry partners to explore data science, machine learning and big data analytics.
Read more

PEOPLE

Laboratory leaders past and present fill the Bldg. 482 auditorium to pay tribute to one of Lawrence Livermore's most prolific innovators and visionary leaders, former LLNL Director John Nuckolls, the 2018 recipient of the John S. Foster Jr. Medal.
Read more

Lawrence Livermore sends 43 employees to the annual Grace Hopper Celebration, the premier international gathering of women in computing. Named after American computer scientist Grace Hopper (1906–1992), the conference packs three days of technical and career sessions (consisting of workshops, panels and presentations), competitions, exhibits, networking and other events.
Read more

Lawrence Livermore scientists Matthias Frank and Megan Shelby, along with Erin McKay, a biology teacher from Tracy High School, present "Biomolecular Action Movies: Flash Imaging With X-ray Lasers," the final lecture in the Science on Saturday series themed "Marvelous Machines," at the Chabot Space and Science Center.
Read more

More than 180 students from San Joaquin and Sacramento counties visit LLNL for STEM Day at the Laboratory, a daylong interactive event focused on science, technology, engineering and mathematics.
Read more

LLNL director emeritus Bruce Tarter discusses the history of the Laboratory and the making of his book, "The American Lab," at an event at the Livermore Public Library.
Read more

The Lab joins more than 150 exhibitors at the Bay Area Science Festival's Discovery Day at AT&T Park. The LLNL booth features its popular Fun With Science interactive program, 3D virtual tours of Lab programs and a special energy bike that challenged participants' peddle power.
Read more

Lab Director Bill Goldstein pays a visit to the Laboratory's small satellite laboratory in Bldg. 691 to see a nanosatellite, or cube satellite (cubesat), that is the culmination of a three-year collaboration between NASA Goddard Space Flight Center and LLNL.
Read more

There's no place like the Lab, especially on Halloween. Employees and visitors embody the true spirit of the holiday, dressing up as a variety of characters, as individuals and as groups.
Read more

Livermore geophysicists play a major role in the preparation of a special focus section about North Korea's September 2017 nuclear test in a recently published issue of *Seismological Research Letters*.
Read more

More than 20 high school students representing FIRST (For Inspiration and Recognition of Science and Technology) visit the Laboratory, sharing their passion for robotics with Lab employees.
Read more

LOOKING BACK AT 2018

Lawrence Livermore National Security, LLC awarded $100,000 to 40 organizations as part of the 2018 Community Gift Program.

"Our team is honored to be recognized for our contribution to the Lab. One of LLNL's key values is inclusiveness — drawing on the widest possible diversity of talents, thought and experiences. We hope that this award brings a spotlight to how much LLNL values and works toward bringing the best and brightest to work at the Lab, regardless of where our employees come from."

-Renee Breyer, SHRM director

OPERATIONS

Sierra, LLNL's newest supercomputer, rises to second place on the list of the world's fastest computing systems.
Read more

Bldg. 151 is the latest site of extensive renovations intended to help ensure that scientists, engineers and support staff carry out the Lab's mission safely and effectively. Construction finishes in four laboratory spaces, combining two labs into one and updating equipment for researchers in the Nuclear and Chemical Sciences Division of LLNL's Physical and Life Sciences Directorate.
Read more

Lawrence Livermore National Security, LLC (LLNS), the contract manager for Lawrence Livermore, announces the recipients for the 2018 LLNS Community Gift Program. These gifts, totaling $100,000, reflect LLNS' commitment to local communities.
Read more

Representatives from Lawrence Livermore and Camp Parks meet to look for opportunities for interactions and relationships of benefit to both organizations.
Read more

The inaugural issue of *Connections* is published. The new quarterly newsletter aims to highlight the Lab's culture of diversity and inclusion, outreach efforts of employees and national awareness months.
Read more

The Public Affairs Office, in partnership with the Environmental Restoration Department, Environmental Functional Area and NNSA Livermore Field Office, design a new external website that provides information on the Lab's environmental stewardship and occupational health and safety responsibilities.
Read more

The Laboratory recognizes National American Indian Heritage Month with a number of events.
Read more

The Lab experiences unhealthy air quality due to fires in Northern California, resulting in curtailed outdoor work and several days where employees were released from duty.
Read more

DECEMBER

SCIENCE AND TECHNOLOGY

Lawrence Livermore National Laboratory's National Ignition Facility and Photon Science Directorate delivers a first-of-its-kind, high-power, fiber-based sodium laser guide star to the University of California, Santa Cruz.
Read more

NIF conducts experiments in FY18 that support the W80-4 life extension program. The data acquired in those experiments is helping weapon designers assess replacement options for aged materials in the W80 warhead, marking the successful completion of one of the 12 key objectives on NNSA's "getting the job done" list of top priorities for FY18.
Read more

Lawrence Livermore researchers introduce a new class of metamaterials that can nearly instantly respond and stiffen 3D-printed structures when exposed to a magnetic field, a development that could be applied to next-generation helmets, wearable armor and a host of other innovations.
Read more

LOOKING BACK AT 2018

Employees gather at the West and Central cafes for a special holiday party hosted by Director Bill Goldstein. This is the fourth year the Director's Office held a holiday gathering at the cafes, where employees enjoyed food, drink and camaraderie.

"About 85 percent of sepsis patients can be diverted with early detection — AI and machine learning with hospital records could be an important tool to achieve that goal."

-LLNL's Director of Innovation Jason Paragas

Lawrence Livermore researchers discover an unusual new type of phase transformation in the transition metal zirconium. The mechanism underlying this new type of phase transition is the first of its kind that has ever been observed, and only could be seen with the application of very high pressures.
Read more

Lawrence Livermore scientists create polymer-based membranes with 1.5-nanometer carbon nanotube pores that mimic the architecture of cellular membranes.
Read more

Lawrence Livermore National Laboratory, in collaboration with researchers at the University of Vermont, explore how deep reinforcement learning can discover therapeutic drug strategies for sepsis by using a simulation of a patient's innate immune system as a platform for virtual experiments.
Read more

Lawrence Livermore's National Ignition Facility and General Atomics engineers create an inertial confinement fusion fuel capsule with a 2-micron-diameter fill tube — and along the way, find a solution to a "Bay Bridge"-like dilemma that could have dramatically slowed the process of fabricating NIF capsules.
Read more

Lawrence Livermore National Laboratory, Sandia National Laboratories/California and the University of California, Berkeley report that new technologies are making wargame tools more accessible and providing strategists with more insights.
Read more

PEOPLE

Director Bill Goldstein attends the awarding of the Nobel Prize for Physics to Donna Strickland. Goldstein is invited by Strickland to go to Sweden for the ceremony.
Read more

Deputy Secretary of Energy Dan Brouillette visits LLNL for a day of tours and briefings. It is the first visit to the Laboratory for the second in command at the DOE.
Read more

Two graduate students from University of California campuses will study black holes and paleoclimatology at Lawrence Livermore thanks to funding from the UC National Laboratory Fees Research Program.
Read more

Kayla Kroll of the Lab's Atmospheric, Earth and Energy Division's Seismology Group unlocks the secrets of hidden earthquakes.
Read more

Congressman Bill Foster visits Lawrence Livermore for tours and briefings.
Read more

Robin Miles is named the director for the High Performance Computing for Energy Innovation (HPC4EI) Program.
Read more

OPERATIONS

Employees gather at the West and Central cafes for a special holiday party hosted by Director Bill Goldstein. This is the fourth year the Director's Office held a holiday gathering at the cafes, where employees enjoy food, drink and camaraderie.
Read more

The LLNL Research Library launches a new external website. It can be accessed through the main laboratory website by clicking on "Science and Technology" and the "About" menu.
Read more

LOOKING BACK AT 2018

The Security Organization and Computation Directorate launch "Partnering With a Security Mindset," the security awareness campaign for FY19.

"Our employees continue to generously support the HOME Campaign and even matched the same level of donations as last year. This is a testament of our employees' commitment to making a positive impact in our local and surrounding communities."

-Bill Goldstein,
LLNS president and director of the Laboratory

Changes to the Livermore Valley Open Campus (LVOC) boundary are completed, resulting in a change of access to both the LVOC area and to traffic flow within the Laboratory.
Read more

The 2017 Site Annual Environmental Report (SAER) for both the Livermore site and Site 300 is available. The SAER records the Lab's compliance with environmental standards and requirements, describes environmental protection and remediation programs and presents the results of environmental monitoring.
Read more

The Laboratory's CY 2019 salary review is underway.
Read more

The Lab plans to release a new version of myLLNL. The new myLLNL runs in pilot mode and receives invaluable feedback (some of which is incorporated in this initial version).
Read more

Lawrence Livermore employees, along with Lawrence Livermore National Security (LLNS), LLC, donate more than $3.7 million to charitable organizations via the annual employee giving program, the Helping Others More Effectively (HOME) Campaign.
Read more

More than 300 employees make their way around more than a dozen tables displaying capabilities of various laboratory departments and groups at the inaugural IT Fest. The event is hosted by the O&B Directorate and sponsored by technology provider Holman's USA.
Read more

The Personal Access Code (PAC) is officially retired, which means employees have one less LLNL password to remember and maintain.
Read more

The Security Organization and Computation Directorate partner for the Annual Security Awareness Expo. Security Director John Lewis and Computation Associate Director Bruce Hendrickson discuss the partnership plan for the year.
Read more

The Injury Update video from Director Bill Goldstein is developed to foster situational awareness and to encourage re-evaluating the hazards of the tasks to be performed, as well as ensuring that controls are in place prior to initiating the task to help prevent injuries and incidents.
Read more

The Weapons and Complex Integration (WCI) directorate hosts 21 delegates from across the U.S. and U.K. nuclear security complexes as a 1.5-day capstone to the 2018 U.S./U.K. Complex Orientation Program.
Read more

AWARDS & RECOGNITION

LLNL chemist Dawn Shaughnessy, whose team helped discover six new elements on the periodic table, is elected a fellow of the American Chemical Society.

Lab scientists and engineers pick up seven R&D 100 plaques, the sixth time that Livermore has won seven R&D 100 awards in one year, including 1987, 1988, 1997, 1998 and 2006.
Read more

Three NA-50 Excellence Awards are presented to LLNL teams by James McConnell, NA-50 associate administrator of Safety, Infrastructure and Operations.
Read more

Fady Najjar, a design physicist at Lawrence Livermore National Laboratory, is elected a fellow of the American Society of Mechanical Engineers.
Read more

Two researchers affiliated with LLNL — a current employee and a retiree — are named fellows of the international Combustion Institute. Bill Pitz, a combustion scientist in the Lab's Materials Science Division, and Charlie Westbrook, a retired Lab employee, are members of the inaugural class of Combustion Institute fellows and are recognized at the 37th International Symposium on Combustion in Dublin, Ireland this summer.
Read more

Four teams of LLNL researchers and one individual are honored during the presentation of the National Nuclear Security Administration Defense Programs Awards of Excellence. The awards honor work performed in 2016 that was critical to ensuring the safety, security and effectiveness of the nation's nuclear deterrent.
Read more

The Global Security Principal Directorate holds its biannual Gold Awards ceremony to recognize outstanding contributions and one-time achievements that are above and beyond the demands of normal job performance.
Read more

LLNL chemist Dawn Shaughnessy, whose team helped discover six new elements on the periodic table, is elected a fellow of the American Chemical Society.
Read more

Five LLNL researchers — Louisa Pickworth, Sarah Baker, Leily Kiani, Alicia Williams and Marcus Worsley — join an eclectic group of entrepreneurs, writers, executives, philanthropists and more on *Diablo Magazine*'s annual "40 Under 40" list, which recognizes young professionals in the East Bay who are leading the charge in their fields.
Read more

Four LLNL researchers — Peter Beiersdorfer, Paul Springer, Robert Falgout and William Pitz — are named Distinguished Members of Technical Staff for their extraordinary scientific and technical contributions to the Laboratory and its missions.
Read more

LLNL statistician Cory Lanker takes bronze in the big data challenge, "Urban Radiological Search Data Competition," in which participants were given three months to devise new radiation-detection algorithms for finding non-natural radiation sources in a simulated U.S. metropolitan streetscape, using a mobile search.
Read More

Four employees from the Environmental Restoration Department receive Eagle Eye security awards.
Read More

Tammy Ma, a plasma physicist at Lawrence Livermore, is named a recipient of the prestigious Department of Energy Office of Science Early Career Research Program.
Read More

Livermore Field Office Manager Pete Rodrik, right, with LLNL Security Police Officer Michael Rodriguez receiving the NNSA Bronze Medal Award.

The National Ignition Facility and Photon Science principal directorate wins first place in the Lab's annual health and fitness "Get Active" challenge, designed to promote exercise and physical activity to improve health.
Read More

Four Lawrence Livermore scientists are selected as 2018 fellows of the American Physical Society.
Read more

LLNL researchers Jay Dawson and Tayyab Suratwala are named fellows by The Optical Society of America (OSA), a distinction awarded to OSA members for their significant contributions to the advancement of optics and photonics.
Read more

LLNL physicist George Anzelon receives one of the National Nuclear Security Administration's top awards for his work in nonproliferation and nuclear security.
Read more

Charles Orth, who has served as a physicist with Lawrence Livermore for more than 40 years, is presented with the 2017 Albert Nelson Marquis Lifetime Achievement Award by the publication *Marquis Who's Who*.
Read more

Henry Chapman, who worked at LLNL from 1996 to 2007, is presented with an honorary doctorate by Sweden's Uppsala University for his work on developing techniques for imaging and crystallography with intense X-ray pulses.
Read more

LLNL physicist Chris Cross is recognized by the undersecretary of defense with an outstanding achievement award. Cross served two years as the technical director of the Joint Munitions Program, a role that has rotated between representatives from Lawrence Livermore, Los Alamos and Sandia national labs for the past 30 years.
Read more

Researchers from the Laboratory's Forensic Science Center receive their eighth straight "A" grade in the Organization for the Prohibition of Chemical Weapons' environmental proficiency tests.
Read more

The Weapons and Complex Integration directorate holds its annual Gold Awards ceremony to recognize outstanding contributions and one-time achievements that are above and beyond the demands of normal job performance.
Read more

Fifteen Lab scientists and engineers are named to Lawrence Livermore's fourth annual Early and Mid-Career Recognition Program.
Read more

Deputy Administrator for Defense Nuclear Nonproliferation Brent Park presents an award to Ruth Kips for her work in support of the National Nuclear Security Administration's Office of Defense Nuclear Nonproliferation Nuclear Smuggling Detection and Deterrence.
Read more

In recognition of important employee and team accomplishments that contribute to the successful execution of the Lab's missions, the Director's Office presents the annual Institutional Operational Excellence Awards to 170 employees divided among nine teams.
Read more

Three teams of Lawrence Livermore scientists, each supported by a Lab business development executive, capture regional awards for technology transfer from the Federal Laboratory Consortium.
Read more

Representatives from the National Nuclear Security Administration, Lawrence Livermore's senior management team, the Livermore Field Office and the Security Organization honor LLNL Security Police Officer Michael Rodriguez with the NNSA Bronze Medal Award.
Read more

Director Bill Goldstein and Deputy Director for Science and Technology Pat Falcone announce the 2018 S&T and Excellence in Publication awards to 18 project teams, conference presenters and journal authors and individuals for their exceptional endeavors in science and technology.
Read more

Laboratory Director Bill Goldstein and Pat Falcone, deputy director for Science and Technology, recognize recipients of the 2018 Director's Awards.
Read more

Director Bill Goldstein announces the 2018 Director's Diversity & Inclusion (D&I) Awards. The D&I awards program was implemented in 2017 to recognize the

Jacqy Turner, Orlando Soto, Christa Ormonde and John Kitchuck (from left) receive the USDA award on behalf of the Laboratory. They are identified and recognized for their contributions toward meeting the Lab's sustainable purchasing goals.

importance of embodying Lawrence Livermore values, in particular, inclusiveness.
Read more

The 13th Annual Computing Grand Challenge campaign awards nearly 67,000 node hours per week to projects that address compelling, large-scale problems, push the envelope of capability computing, and advance science.
Read more

Security Police Officer Daniel Touchstone receives an Eagle Eye Award for security awareness.
Read more

The Security Organization recognizes Eric Shi for showing initiative in protecting personally identifiable information.
Read more

To honor outstanding leadership, motivation, character and tactical proficiency, Sgt. Joseph Scott, a member of the Lab's Protective Force, is presented with the 2018 Colonel Elliott Sydnor Memorial Award in recognition of his efforts as a member of DOE/NNSA's Composite Adversary Team.
Read more

The Department of the Air Force recognizes LLNL scientist Cesar Pruneda with an Award for Meritorious Civilian Service for his "distinguished performance" while on offsite assignment as scientific adviser to Air Force Global Strike Command.
Read more

LLNL retiree Bruce Cohen receives the 2018 IEEE Nuclear and Plasma Sciences Society's Charles K. Birdsall Award for "contributions to the numerical simulation of plasmas, particularly multiple time-scale methods and to their application to diverse plasma physics problems, from laser-plasma interactions to tokamaks."
Read more

LLNL magnetic fusion physicist Max Fenstermacher is awarded the 2018 John Dawson Award for Excellence in Plasma Physics Research from the American Physical Society.
Read more

LLNL atmospheric scientist John Nasstrom receives the NNSA Administrator's Distinguished Service Gold Award for his service to U.S. national security, particularly in the areas of atmospheric dispersion modeling and incident response at the National Atmospheric Release Advisory Center.
Read more

Director Emeritus John Nuckolls is named the fourth recipient of the John S. Foster Jr. Medal in recognition of his outstanding leadership and service to the nation.

The prestigious award is bestowed on an annual basis for exceptional leadership in scientific, technical and engineering development and policy formulation in support of U.S. nuclear security.
Read more

The Global Security Principal Directorate holds its biannual Gold Awards ceremony to recognize outstanding contributions and one-time achievements that are clearly above and beyond the demands of normal job performance.
Read more

Two programs and teams of employees within the Strategic Human Resources Management Department are honored with gold and silver 2018 Optimas Awards by *Workforce* magazine. LLNL earns a gold award for managing change and a silver for vision.
Read more

LLNL receives an award from the U.S.Department of Agriculture Bio-preferred Program for purchasing bio-based materials that include all the compostable products used in Laboratory cafeterias and bio-based cleaning products used by the custodial division.
Read more

Daniel Clark, leader of NIF's Capsule Modeling Working Group within LLNL's Inertial Confinement Fusion Program, receives the 2018 Ronald C. Davidson Award for Plasma Physics. The annual award recognizes outstanding plasma physics research by an author published in the journal *Physics of Plasmas.*
Read more

The high-performance computing publication *HPCwire* hands Lawrence Livermore and Oak Ridge National Laboratory their Editors' Choice and Readers' Choice

Lawrence Livermore chemist Bill McLean is awarded the Secretary's Achievement Award for his contributions to the stockpile stewardship program at LLNL.

LOOKING BACK AT 2018

Awards for the Top Supercomputing Achievement of 2018, recognizing the launch of the world's two fastest computing systems.
Read more

It's a banner year for LLNL researchers garnering major grants through the Department of Energy's Technology Commercialization Fund program, as the Laboratory captures five commercialization grants to advance research and technology projects.
Read more

Secretary of Energy Rick Perry recognizes LLNL chemist Bill McLean with a Secretary's Achievement Award for "pioneering technical contributions" that provided a framework for predicting the lifetimes of materials in nuclear weapons.
Read more

Security Policer Officer John Nolan is recognized with an Eagle Eye Award for security awareness.
Read more

The Security Organization recognizes Shelly Sutherland and David Shaughnessy with an Eagle Eye Award for security awareness.
Read more

Lawrence Livermore is honored with a Glassdoor Employees' Choice Award, recognizing the Best Places to Work in 2019.
Read more

Casey Dibble, Engineering directorate, and Manny Rubio, Facilities & Infrastructure, receive the Security Organization's Eagle Eye Award for security awareness.
Read more

This issue of *Newsline* was produced by the Public Affairs Office.

It represents a sample of the science and technology, people and operations highlights of the year. It is available on the LLNL website.

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